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AUTHOR St. Germain, Amos
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ABSTRACT

An approach to teaching American studies at a Southern institute of engineering technology is described. The curriculum of this school is technically oriented to the professional engineer. Elective humanities courses must attract their own market and justify their places to both the students and the faculty. Two courses entitled "Man and Technology" and "History of American Technology" have been developed to humanistically study the role of technology in our culture and to fit in with the present curriculum. The first course is conducted as a colloquium with emphasis placed on student participation. The course contains eight units which focus on the images that motivate role behavior, the ideology of technology, the theory of the artifact as social action and performance, the moral responsibility of technology, the philosophy of Buckminster Fuller, Frank Lloyd Wright's organic view of nature, personal space and the behavioral basis of design, and Erich Fromm's philosophy of a humanized technology. Student and faculty response to the course has been favorable. (DE)

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American Studies and the Technical Curriculum

"Man and Technology"

by

Amos St. Germain, Ph.D.

Southern Technical Institute

(A Presentation to the Southeast American Studies Association, Charlotte, North Carolina, April 2, 1976)

SP 009 116

When you declare that you teach an American Studies course at Southern Technical Institute, where the majority of the students are working for a bachelor's degree in engineering technology, you find that you have a whole battery of things to explain such as: what is a technical institute? what is engineering technology? and what is American Studies? In a fit of cowardice, rather than explaining what I teach and where, I'll say that I teach English at one of the colleges of Georgia Tech and let it go at that. But a more serious examination of American Studies in such a context may reveal that American Studies courses are some of the best tools for providing a general knowledge of culture in the college curriculum, some of the best ways of producing an "educated imagination," a relevant education in the best sense. American Studies also presents a means of modifying and adapting traditional subject matter to a career-centered curriculum (a condition that may become increasingly more prominent in higher education as the demand for economic relevance increases).

Before discussing the approaches to American Studies used at Southern Tech, perhaps a word of introduction about the concept of the technical institute is necessary. In the case of Southern Technical Institute our main products are the two-year engineering technician and the four-year engineering technologist in various fields of engineering: architectural, civil, mechanical, industrial, and electrical. These are people who - after testing, experience, and licensing - may become professional engineers like the graduates of engineering

colleges. But more probably, many will go into the great middle area of engineering processes. They are the highly skilled people who interpret designs, coordinate operations, supervise production, and in general help to translate design into practical procedures that are even occasionally understandable to their liberal-arts-trained professors. Southern Tech produces about eight per cent of the engineering technicians and technologists produced nationally each year.

Such degree objectives produce a rather odd curriculum. As you might expect, certain emphases and options wax and wane with the demands of industry. Southern Tech is "the" school to attend in Georgia for a complete training in surveying. The surveying option includes seven required courses with field labs. The province of industrial engineering technology grows ever larger with the development of new products. The chairman of electrical engineering technology jokingly summed up his curriculum as circuit analysis followed by more circuit analysis followed by more circuit analysis. The Dean and Executive Director of Southern Tech remarked to me recently that the engineering technology curriculum now resembles the stardard engineering curriculum of twenty years ago. The curriculum is thus very lean, and elective courses must attract their own market and justify their place. And, of course, the curriculum is taught by a faculty to students. One cannot presume that the "needs" of the humanities and basic studies faculty will always be seen as such by the degree-granting technical departments who are concerned with their students'professional

preparedness. Also, some of the students at first mistakingly think that the school is some sort of consolation prize for those who were not admitted to the engineering college of their choice. Yet the core curriculum for the four-year degree requires more courses in language and communication than any other non-humanities curriculum in the Georgia State University System. A four year candidate must take physics, math, two courses in history, and English composition, business communications, speech, general semantics, technical writing, and one course in literature. The utility of this is clear. Misinterpretation of a Robert Frost poem is indeed unfortunate, but misinterpretation in civil engineering can get you killed.

That then is the Southern Tech context. The students are career centered. The curriculum is lean. There often seems to be the split between the scientific and literary cultures that C.P. Snow spoke of long ago. Certain technical courses must be taken in sequence and yet there are hefty requirements in the humanities. What you must do is to follow the advice of Booker T. Washington and cast down your bucket where you are. You must adapt. One begins to look at one's research and teaching with a slightly different lens. Sometimes the waters are very sweet indeed. Electives have been offered in that literature which is the child of science and technology (namely, science fiction). Two new courses have been created recently, "Man and Technology" and "The History of American Technology," which will become a regularly offered part of the curriculum and which we will deal with specifically today.

If I had to sum up the activity that goes on in American Studies at Southern Tech, two central words would come to mind, dymaxionization and eiconics. The first I have borrowed from the guru of the geodesic dome and generalist, Buckminster Fuller, and it means doing more with less. This is what American Studies must do in the technical curriculum. The second term, eiconics, is borrowed from social scientist Kenneth Boulding. It was a term he coined in The Image (1956) for the systematic study of the mental and social images that inform human activity. With our core requirements and limited electives we teach the style, if not the complete content, of humanistic thinking. We endeavor to give a mini-minor in the humanities and communications. Perhaps the best way to proceed further would be to chart the areas of inquiry, the aims, questions, reactions, and conclusions that have been obtained in American Studies at Southern Tech thus far.

Man and Technology
-a colloquium-

Texts: Kurt Vonnegut, Jr. Cat's Cradle. New York: Dell, 1970.

R. Buckminster Fuller. Operating Manual for Spaceship Earth. New York: Pocket Books, 1970.

Edgar Kaufmann and Benn Raeburn, eds. Frank Lloyd Wright: Writings and Buildings. New York: New American Library, 1974.

Robert Sommer. Personal Space. Englewood Cliffs: Prentice-Hall, 1969.

Erich Fromm. The Revolution of Hope. New York, Bantam, 1968.

Units and Questions:

a) Man and the Image (resource: Kenneth Boulding's The Image)

What are the images that motivate role behavior? What are the effects of the working images in various fields of knowledge? This section is essential in that it provides some of the unity for a deliberately eclectic course of this nature for the course involves not only the presentation of factual materials but also what people think and feel about the facts, what they feel are the facts, that is, interpretation.

b) The Faith that dethroned Faith (resource: Alfred North Whitehead in Eugene S. Schwartz. Overskill. Chicago: 1971).

What are the general assumptions that make up the scientific-technological world view? What is the rationale behind them? This material is supplemented by that found in Samuel Florman's excellent article, "In Praise of Technology," Harpers, November, 1975. This section serves as a general introduction to the ideology of technology.

c) Artifacts as acts

This section of the course is extremely important for it sets up a critical framework with which to approach the readings in the course and by implication any subject matter in the humanities. The object observed (read) is seen as an action rather than a thing. The writer and the reader are both seen as performers. The artifact (book) is seen to include the author, the

reader, the thing said, and the enveloping context. The theory of the artifact as social action and performance put forth by Kenneth Burke, Hugh D. Duncan, Gene Wise, myself, and others is emphasized. The student is encouraged to ask of any reading he encounters the following questions: Who? Where? When? Why? How? How well? What? What did I first expect? Did my expectation change? With such an introduction the students can begin to question the craft and vocabularies of various fields and their own reactions.

d) Vonnegut - Cat's Cradle

At what level is Vonnegut connecting technology and the general culture? What is the moral responsibility of technology? Who bears that responsibility? What does Vonnegut seem to say about technology and truth? What is the function of ideology in Vonnegut's world? What is his attitude toward "purse" research?

e) Buckminster Fuller - Operating Manual for Spaceship Earth

Fuller the neologist. Fuller's demand for a new generalism. Fuller's graphs of technological development, his technological poems and his new renditions of history. Fuller's new definitions of wealth, his opinions of politics and the world to come. Fuller's dymaxionization - doing more with less. Fuller's seeming demand for the end of Snow's two cultures.

f) Frank Lloyd Wright - Writings and Buildings

Emerson - Sullivan - Wright - Soleri - the continuation

of the Emersonian tradition of the organic view of nature. What kind of technical education nurtures the imagination? What is the relationship between man and the machine? What is style? What is form? What is function? Whitman - Sullivan - Wright - Fuller - Soleri - the democratic vistas of America. Wright on the nature of materials.

g) Robert Sommer - Personal Space - The Behavioral Basis of Design

Expanding the realm of design and technology - the encompassing environment. Designs in interpersonal communications - spatial behavior. The design of daily living space - prisons, dormitories, schools, hospitals, and apartment complexes.

h) Erich Fromm - The Revolution of Hope: Toward a Humanized Technology

Fromm, Tillich, May, Altizer, Multmann, Roszak, De Chardin, Hertzog, Dubos - the spiritual impact of technology. Putting man back into design. The spiritual landscape of tehcnology - redemption and resurrection.

Student Participation:

The course is conducted as a colloquium with great emphasis placed on student participation. Students submitted both oral and written reports. This was an opportunity for them to include their own technological disciplines and expertise. Reports covered areas such as: a systematic (social, political, environmental, media, educational, and maintenance) consideration

of supersonic air travel, nuclear power and its safety, the future of the automobile, technology and the arts, the practical impact of space research, and the industrial and social implications of the development of new materials for the building trades.

Results and Tentative Conclusions:

It is highly probable that some of the texts used in this course might be changed. In fact, I hope that this happens for the students have shared with me and with each other the current concerns and literature of their technical fields. Student reaction to the course was excellent. Given the responsibility of preparing reports, the students responded admirably. From my perspective the course broadened prospective fields of research. For instance, I have become interested in mapping more precisely the relationship between American literature and technology. The students expressed the opinion that they had learned that their technical fields had implications (social, political, etc.) that they had not previously considered. And they were unanimous in the feeling that there should be, there must be, more interaction between the liberal arts and technology. Reaction from the technical faculty was good; some even wanted to take the course when it is offered again. Finally from an educational theory point of view, the students had acquired some skill in eiconics, skill in using various types and systems of knowledge. This is what American Studies in the technical curriculum can and should do if the humanities departments are to be "service" departments in the best sense of that word.